# Real Devices VS Emulators VS Simulators For App Testing

It's always better to use real devices rather than emulators/simulators for testing. But real devices come at a cost and to thoroughly test an app, you will have to set up a device lab. The best way to avoid this kind of needless investment is to use pCloudy, a cloud-based testing platform. **pCloudy** has more than 5000 device browser combinations to test your app and is loaded with features like an AI-powered autonomous testing bot. But first, let's understand the difference between emulators and simulators.

## Difference Between Simulators And Emulators

Emulators are used when there is a need to test the internal hardware or firmware of a mobile. It is written in machine level language and is more suitable for debugging than simulators. Whereas, simulators are a less complex application compared to emulators which simulate the external behavior of a device. A simulator is written in a high-level language and is just a partial re-implementation of the original software.

## Advantages and Disadvantages of Emulator/Simulator Based Testing

The main advantage of using Android emulator online or simulators is that you don't have to worry about purchasing a set of real devices. You will find Simulators and emulators free on the internet. Web app testing is easier as you just need to copy and paste the app URL and screenshots can be captured using MS Office tools.

Some of the disadvantages of using the emulators or simulators are that they cannot simulate battery issues and interruptions like call and SMS. Emulators and simulators cannot simulate the exact display of the device in different light

conditions. Performance tends to be slower as compared with the real devices and memory space also vary which can compromise the user's validation.

## Advantages and Disadvantages of Real Devices Based Testing

Real device testing allows testers to test the app for all realtime scenarios like interruptions, battery usage, CPU usage, network conditions, etc. Performance can be tested better on real devices as you can use the app for a long time to see if there is any hang or lag issue. Altogether it is more reliable to test the app on real devices.

disadvantages of using the real device for testing is the cost attached to it. Moreover, it is difficult to connect a real device to the IDE and it should always be connected by the USB port.

## Conclude

Both Real devices and simulators/emulators have their advantages and disadvantages. Although, there is an alternative to use real physical devices remotely through the cloud. This is the best option as it minimizes all the disadvantages of using real devices or a simulator/emulator, and the tester can enjoy all the advantages of both. There is no need to invest heavily on the device setup and it is reliable as you will be testing your app on real devices. There are many platforms which provide this kind of solution, but pCloudy stands out as it is loaded with many features which makes a testers life easier.